

Applicant or Patentee: Douglas Howard Greenspan and Phillip A. Low
 Serial or Patent No.: _____ Docket No.: 1286
 Filed or Issued: _____
 For: CLEANING COMPOSITIONS WITH ORANGE OIL

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
 STATUS (37 CFR 1.3 (f) and 1.3 (b)) — INDEPENDENT INVENTOR

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.3 (c) for purposes of paying reduced fees under section 41 (a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled CLEANING COMPOSITIONS WITH ORANGE OIL described in

☒ the specification filed herewith
☐ application serial no. _____, filed _____
☐ patent no. _____, issued _____

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.3 (c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.3 (d) or a nonprofit organization under 37 CFR 1.3 (e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

☐ no such person, concern, or organization
☐ persons, concerns or organizations listed below:

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

FULL NAME _____
 ADDRESS _____
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

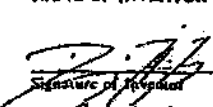
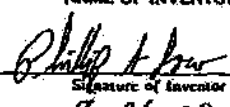
FULL NAME _____
 ADDRESS _____
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME _____
 ADDRESS _____
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28 (b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent in which this verified statement is directed.

Douglas Howard Greenspan Phillip A. Low
 NAME OF INVENTOR NAME OF INVENTOR NAME OF INVENTOR


 
 Signature of Inventor Signature of Inventor Signature of Inventor

9-26-07 9-26-07
 Date Date Date

LPM 000167

413395

FORM PTO-1082



Case Docket No. 1286

THE COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

Date: September 27, 1989

Sir:

Transmitted herewith for filing is the patent application of
Inventor: Douglas Howard Greenapan and Phillip A. Low
For: CLEANING COMPOSITIONS WITH ORANGE OIL

Enclosed are:

☐ NO sheets of drawing.

☐ An assignment of the invention to _____

☐ A certified copy of a _____ application.

☐ An associate power of attorney.

☒ A verified statement to establish small entity status under 37 CFR 1.9 and 37 CFR 1.31.

☐

The filing fee has been calculated as shown below:

	(Col. 1)	(Col. 2)	SMALL ENTITY		OTHER THAN A SMALL ENTITY	
FOR:	NO. FILED	NO. EXTRA	RATE	FEE	RATE	FEE
BASIC FEE				\$185		\$370
TOTAL CLAIMS	18 -20-	0	0 x6	\$00	0 x12	\$
INDEP CLAIMS	4 -3-	1	1 x18	\$18	1 x36	\$
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENTED			+60	\$	+110	\$
*If the difference in Col. 1 is less than two, enter "0" in Col. 2			TOTAL	\$203.	OR TOTAL	\$

☐ Please charge my Deposit Account No. _____ the amount of \$_____. A duplicate copy of this sheet is enclosed.

☒ A check in the amount of \$203.00 covers the filing fee is enclosed ☐ and recordation of assignment.

☐ The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. _____. A duplicate copy of this sheet is enclosed.

☐ Any additional filing fees required under 37 CFR 1.16.

☐ Any patent application processing fees under 37 CFR 1.17.

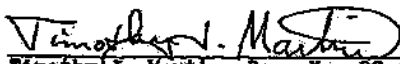
☐ The Commissioner is hereby authorized to charge payment of the following fees during the pendency of this application or credit any overpayment to Deposit Account No. _____. A duplicate copy of this sheet is enclosed.

☐ Any patent application processing fees under 37 CFR 1.17.

☐ The issue fee set in 37 CFR 1.31 as or before mailing of the Notice of Allowance, pursuant to 37 CFR 1.311 (b).

☐ Any filing fees under 37 CFR 1.16 for presentation of extra claims.

Respectfully submitted,


 Timothy J. Martin, Reg. No. 28,640
 J. Preston Oxenham, Reg. No. 31,862
 44 Union Blvd., Suite 620
 Lakewood, Colorado 80228



CERTIFICATE OF EXPRESS MAILING UNDER 37 C.F.R. 1.10

I hereby certify that the attached documents, including a patent application entitled CLEANING COMPOSITIONS WITH ORANGE OIL, with check number 8238 for \$203.00, declaration and power of attorney, and verified statement claiming small entity status are being deposited with the United States Postal Service as EXPRESS MAIL, label number B94492708, for overnight delivery in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, DC 20231, on this 27th day of September, 1989.

Ann R. Carlsby

MH

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark OfficeAddress: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

07/413,395 09/27/89 GREENSPAN

D 1286

TIMOTHY J. MARTIN
44 UNION BLVD., STE. 620
LAKEWOOD, CO 80228

SPEAR, J

152

2

04/19/90

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire _____ month(s) 30 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-848. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1448. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-162. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-18 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☐ Claims _____ are rejected.
5. ☐ Claims _____ are objected to.
6. ☒ Claims 1-18 are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-848).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received
☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other _____

EXAMINER'S ACTION

PTOL-328 (Rev. 5-89)

LPM 000170

Serial No. 413,395

-2-

Art Unit 152

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-15, drawn to a skin cleaning preparation, classified in Class 424, subclass 401.

II. Claims 16-18, drawn to a towelette, classified in Class 15, subclass 209.

The inventions are distinct, each from the other, because of the following reasons:

Inventions Group I and Group II are related as mutually exclusive species in intermediate final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP Section 806.04(b), 3rd paragraph), and the species are patentably distinct. (MPEP Section 806.04(h)).

In this instant case, the intermediate product is deemed to be useful as a liquid cleanser or solvent solution for cosmetics, and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants, or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence of admission may be used in a rejection under 35 U.S.C. 103 of the other invention.

Because these inventions are distinct for the reasons given above, and have acquired a separate status in the art as shown by their different classification,

LPM 000171

Serial No. 413,395

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Art Unit 152

restriction for examination purposes as indicated is proper.

Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement may be traversed. (37 CFR 1.141).

A telephone call was made to Mr. Timothy J. Martin on April 4, 1990 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is reminded that upon the cancellation of claims to a nonselected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently filed petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(h).

The Group and/or Art Unit location of your application in the Patent and Trademark Office has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group 150, Art Unit 152.

Any inquiry concerning this communication should be directed to James M. Spear at telephone number 703-557-6525.

§

J.Spear:12k

04/11/90

THA-9
12k

LPM 000172



RECEIVED

MAY 23 1990

GROUP 150

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RE: Patent Application for	:	Date: May 17, 1990
Greenspan and Low	:	Group: Art Unit 152
Serial No.: 07/413,395	:	Examiner: J. Spear
Filed: September 27, 1989	:	Action: ELECTION WITH
For: CLEANING COMPOSITIONS WITH	:	TRAVERSE
ORANGE OIL	:	

TO: The Commissioner of Patents and Trademark Office
Washington, DC 20231

Sir:

In response to the Office Action of 19 April 1990, Applicant hereby provisionally elects to prosecute the species shown in Claims 1-15 which is drawn to a skin cleaning preparation. This election is made with traverse.

In the present matter, the Examiner has required the restriction of the invention to a single species disclosed according to 35 U.S.C. 121. The Examiner has argued that Claims 1-15 designated group 1 are drawn to a skin cleaning preparation classified in Class 424, subclass 401 and that Claims 16-18 designated group 2 are drawn to a towellet, classified in Class 15, subclass 209. The Examiner alleges the inventions are distinct because the invention group 1 and group 2 are related as mutually exclusive species in intermediate-final product relationship. The Examiner claims that the intermediate product is deemed to be useful as a liquid cleaner or solvent for cosmetics. Therefore, the Examiner alleges that the inventions are patentably distinct since there is nothing in the record to show them to be obvious variants.

It is believed that the Examiner's citation of MPEP § 806.04(b) third paragraph is not an appropriate rejection in this matter. It is not believed that this is a case of an intermediate product and a final product. The example of an intermediate and final product shown in the MPEP has to do with two carbon compounds presumably developed in a chemical process of producing a new composition of matter. The present invention is not an intermediate and final product, instead it is a combination with an essential sub-combination. The MPEP § 806.05(a) defines a combination or an aggregation as an organization in which a sub-combination or element is apart. It is believed that Claims 16-18 are drawn to a combination, and Claims 1-15 are drawn to a sub-combination or element or part of that combination. It is believed that MPEP § 806.05(c) is the appropriate section to be reviewed in regards to the issue of patentability and the distinction of this combination. MPEP 806.05(c) is instructive:

in order to establish that combination and sub-combination inventions are distinct, 2-way distinctness must be demonstrated.

To support a requirement for restriction, both 2-way distinctiveness and reasons for insisting on restrictions are necessary. If it can be shown that a combination, as claimed (1) does not require to particulars of these sub-combinations claimed for patentability (to show novelty and unobviousness), and (2) the sub-combination can be shown to have utility either by itself or in other and different relations, the inventions are distinct. When these factors can not be shown, the inventions are not distinct.

It is believed that the second example shown under 806.05(b) is similar to the facts underlying this invention. If there is no

evidence that the combination is patentable without the details of the sub-combination, restriction should not be required. Where the relationship between the claims is such that the separately claimed sub-combination constitutes the essential distinguishing feature of the combination as claimed, the inventions are not distinct and a requirement for a restriction must not be made, even though the sub-combination has separate utility.


The combination of Claims 16-18 show a towellet formed of absorbent material with a cleaning composition comprising a first ingredient being from between 5% and 50% by volume of orange oil, and a second ingredient being pharmaceutically acceptable moisturizer for human skin and a third ingredient being an emulsifying agent. The sub-combination of Claims 1-15 show a cleaning composition which includes the three (3) previously mentioned ingredients. The sub-combination is claimed separately and constitutes the essential distinguishing feature of the combination of the towellets and ingredients as claimed in Claims 16-18. There is no evidence that the combination of A, a towellet formed of absorbent material and B, a cleaning composition, is patentable without the details of B which are the various ingredients which make B up. Towellets formed of absorbent material that have cleaning compositions impregnated on them packaged in a small sealed container are known. Thus under MPEP 806.05(b) the sub-combination, which is the cleaning composition and the various ingredients that make it up, is

essential distinguishing feature of the combination of a towellet formed of absorbent material with the cleaning combination. The inventions are not distinct and requirement for restriction is inappropriate although the sub-combination may have a separate utility.

The Applicants submit that the combination and the sub-combination which are Claims 1-18 are clearly permitted in the manner claimed in the present invention as originally filed. See MPEP 806.05(b). Because this invention has claims to a sub-combination and claims to a combination in which the sub-combination is essential to the combination, a restriction requirement should not be required. Therefore, the Applicants request that the Examiner reconsider the restriction requirement and if appropriate kindly withdraw the restriction requirement set forth in the Office Action of 19 April 1990.

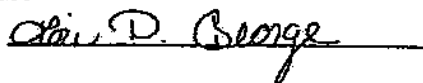
Respectfully submitted,

TIMOTHY J. MARTIN, P.C.


 Timothy J. Martin, #28,540
 Raymond Fink, #29,309
 Dana Rewoldt, #P-33,762
 44 Union Blvd., Suite 620
 Lakewood, Colorado 80228
 (303) 988-0800

CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.8

I hereby certify that the foregoing ELECTION WITH TRAVERSE is being deposited with the United States Postal Service as first-class mail, postage prepaid, in an envelope addressed to The Commissioner of Patents and Trademarks, Washington, DC 20231, on this 15th day of May, 1990.




UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

 Address: COMMISSIONER OF PATENTS AND TRADEMARKS
 Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
077413,395	09/27/89	GREENSPAN	1266

 TIMOTHY J. MARTIN
 44 UNION BLVD., STE. 620
 LAKEWOOD, CO 80228

EXAMINER

ART UNIT	PAPER NUMBER
152	4

DATE MAILED:

06/19/90

 This is a communication from the examiner in charge of your application
 COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s) _____ days from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-602. | 2. <input type="checkbox"/> Notice of Patent Drawing, PTO-648. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-18 are pending in the application.
- Of the above, claims 16-18 are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-15 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.25 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____ Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice to Patent Drawing, PTO-648).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Clegg, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

PTOL-329 (Rev. 9-89)

EXAMINER'S ACTION

LPM 000177

Serial No. 413,395

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Art Unit 152

This action is in response to the election with traverse of claims 1-15 submitted May 17, 1990 by Timothy J. Martin. The applicants' arguments have been considered but they are not deemed to be persuasive.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claim 1 is rejected under 35 U.S.C. 103 as being unpatentable over Coleman, The Citrus Industry Publ., November 1975.

Coleman shows a lotion hand cleaner comprising approximately 57% d-limonene, moisturizer (lanolin) and emulsifying agents (Arlacel and Tween). Although distilled citrus oil (94% d-limonene) is used it would be obvious to use orange oil, if it were not the source in this case. Page 24-25.

Claim 2 is rejected under 35 U.S.C. 103 as being

LPM 000178

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Art Unit 152

unpatentable over Coleman as applied to claim 1 above,
and further in view of Dellutri US 4,620,937.

Dellutri shows a skin cleaner comprising d-limonene
and further comprising aloe vera. To use aloe vera in
the Coleman invention would be obvious since both
inventors teach hand cleaners of similar compositions
containing moisturizers. Col. 1, lines 60-65. Col. 3,
lines 23-28.

Claims 3-7; 9-15 are rejected under 35 U.S.C. 103
as being unpatentable over Coleman and Dellutri as
applied to claim 2 above, and further in view of Juliano
et al US 4,014,995.

Juliano for claim 3 shows compositions for use on
the skin containing oat flour. Juliano further shows
oat flour as an emulsifier. Col. 1, lines 34-40. Col.
3, lines 16-25. To use the oat flour in the invention
described above would be obvious in as much as the use of
emulsifiers is a well recognized art. Nothing unobvious
is seen by using oatmeal in claim 4, since oatmeal by
definition is ground oats of a larger particle size than
flour.

For claim 5 both Dellutri and Juliano teach
compositions having a pH of 5.5. Juliano col. 2, lines
3-13, col. 3, lines 5-15. Dellutri col. 3, lines 52-59.

Serial No. 413,395

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Art Unit 152

For claims 6-7 Juliano teaches the inclusion of substances to maintain a specific pH. Nothing un-obvious is seen in applicant's use of a pH range of 4.5-6, since the prior art shows the importance of pH balanced preparations for on the skin use.

Claim 8 is rejected under 35 U.S.C. 103 as being unpatentable over Coleman, Dellutri, Juliano as applied to claims 1-7 above, and further in view of Jones US 4,533,487.

Jones shows the preparation of d-limonene containing buffers. The preparation is rendered harmless to the skin primarily due to the presence of the buffers. See, Col. 3, lines 43-50. To use the buffered stable d-limonene preparations of Jones in the above mentioned inventions would be obvious in view of the prior art teachings. Note Dellutri's use of stabilized d-limonene. Col. 2, lines 19-23.

For claims 9-11 see Coleman, Dellutri and Juliano as applied to claim 3 above.

For claim 12 see Juliano as applied to claim 4 above.

For claims 13-15 see Coleman and Dellutri as applied to claim 2. Glycerin, aloe vera, jojoba oil and safflower oil are considered equivalents. Nothing un-obvious is seen in applicants use of mixtures.

LPM 000180

Serial No. 413,395

-5-

Art Unit 152

The motivation to produce cleaning compositions for use on the skin arises from the teachings of Coleman, Dellutri, Juliano and Jones who suggest the desirability to prepare cleaners comprised of orange oil having enhanced cleaning properties. The formulations are non-toxic, stable and non irritating to the skin. Claims 145 are rejected.

The Group and/or Art Unit location of your application in the Patent and Trademark Office has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group 150, Art Unit 152.

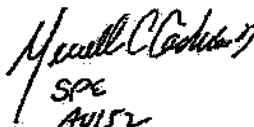
Any inquiry concerning this communication should be directed to James M. Spear at telephone number 703-557-6525.



Spear:pla

(703) 557-6525

06/11/90


SPE
A152

LPM 000181

TO SEPARATE, TURN TOP AND BOTTOM EDGES, SNAP-APART AND PULL TO CARBON

FORM PTO-892 (REV. 3-78)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		SERIAL NO. 413395	GROUP/ART UNIT 152	ATTACHMENT TO PAPER NUMBER 4	
NOTICE OF REFERENCES CITED				APPLICANT(S) Greenspan et al.			
U.S. PATENT DOCUMENTS							
A	DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE	
A	4014995	3-77	Juliano et al.	514	783		
B	4533487	8-85	Jones	252	173		
C	4620937	11-86	Pellutri	252	162		
D							
E							
F							
G							
H							
I							
J							
K							
FOREIGN PATENT DOCUMENTS							
L	DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PARTIAL SPEC. NO.
L							
M							
N							
O							
P							
Q							
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)							
R	D-Limonene as a Degreasing Agent						
S	Richard L. Coleman, The Citrus Industry						
	Vol. 56, No. 11, November, 1975, pages 23-25						
T							
U							
EXAMINER		DATE					
James M. Spear		6-1-90					
* A copy of this reference is not being furnished with this office action. (See Manual of Patent Examining Procedure, section 707.05 (a).)							

LPM 000182

RECEIVED

SEP 21 1990

GROUP 150



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application for	:	Date: September 18, 1990
Greenspan and Low	:	Group: Art Unit 152
Serial No.: 07/413,395	:	Examiner: J. Spear
Filed: September 27, 1989	:	Action: AMENDMENT
For: CLEANING COMPOSITIONS WITH ORANGE OIL	:	

TO: The Commissioner of Patents and Trademark Office
Washington, DC 20231

Sir:

In response to the Office Action of 18 June 1990, please
reconsider the claims of this application in view of the
following remarks:

REMARKS

These remarks are in response to the Office Action of 18 June 1990 in the above referenced patent application. In that application, Claims 1-18 were pending. However, Claims 16-18 were deemed withdrawn from consideration despite Applicants' traverse of the election.

Of the remaining claims, Claim 1 was rejected over Coleman, The Citrus Industry Publication, November 1975 under 35 U.S.C. Section 103. Claim 2 was rejected over Coleman in further view of U.S. Patent No. 4,620,937 to Dellutri under 35 U.S.C. Section 103. Claims 3-7 and 9-15 were rejected over Coleman and Dellutri in further view of U.S. 4,014,995 to Juliano. Claim 8 was rejected over the Coleman reference in view of Dellutri and Juliano and in further view of U.S. Patent No. 4,553,487 to Jones.

At the outset, Applicants note with appreciation the thoroughness of the Examiner's comments in applying the cited references against the claims. However, Applicants have not amended their claims since they believe that the references teach away from the present invention, as currently claimed, so that all of the claims in this application are allowable over these references. Applicants' position is supported by two arguments.

First, as the Examiner has noted, none of the cited references disclose the use of orange oil as a primary constituent. Rather, each of the references rely on the cleaning properties of d-limonene as the primary cleaning constituent. The Examiner then concludes that it would be obvious to substitute orange oil for the d-limonene since the d-limonene is distilled from a citrus oil.

Simply put, these references do not suggest the use of orange oil alone, but rather teach away from the use of orange oil since they rely on the distillate d-limonene. Applicants have found that undistilled orange oil has higher cleaning properties when used in a composition than distilled d-limonene. Applicants have tested the compositions produced according to the ranges of the present application wherein an equal weight percent of d-limonene was substituted for the orange oil. In each case, the orange oil based composition had superior cleaning properties than the identical composition with an equivalent amount of d-limonene substituted for the orange oil. While Applicants believe that other esters and volatiles in the orange oil may contribute to the enhanced cleaning properties, although the

exact reason for the enhanced cleaning properties has not yet been determined. Nonetheless, Applicants have learned of a surprising result from the raw orange oil in these enhanced cleaning properties. This distinction over the use of d-limonene in the prior art is significant and not at all obvious. Indeed, Applicants have found that their composition is effective on substances such as urethane caulking, paint and tar that resist d-limonene cleaning compositions.

The enhanced cleaning property of orange oil contributes to the second distinction between the compositions recited in this application and the prior art. A review of the prior art shows that d-limonene is used in weight percentage ratios that are above the lower ratios claimed in the present application. These ratios run from a low of 51% d-limonene (Coleman) to a high of approximately 70% d-limonene (Coleman). Dellutri uses approximately 58%-60% d-limonene. As noted in the Coleman reference, citrus oil contains approximately 94% d-limonene so that the equivalent amount of citrus oil necessary to provide the amount of d-limonene in the prior art compositions run from approximately 55%-75%.

Claim 1 of the present application claims a range of 5% to 60% orange oil which, as noted above, allows for greater cleaning ability for lesser of the included cleaning agent (orange oil). Since the expense of orange oil is fairly substantial, this surprising result allows a reduction in the proportion of orange oil as opposed to d-limonene, and this leads to substantial economies.

A derivative benefit is seen where the quantity of orange oil, (and thus the amount of d-limonene) since studies have indicated that d-limonene may have carcinogenic effects. For example, the attached study taken from the National Toxicology Study Program (January 1990) indicates a possible adverse effect from excess d-limonene. Where a cleaning composition is intended as one suitable for hand cleaning, as is the present invention, the benefits from reducing the quantity of d-limonene while maintaining the cleaning ability may be appreciated without further explanation.

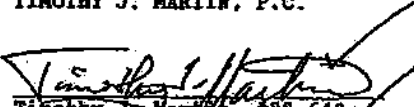
Accordingly, all of the claims in this application are believed allowable for the inclusion of orange oil. However, several points directed to the dependent claims are in order since it is believed that the dependent claims contain allowable subject matter in their own right. In particular, those claims including the use of oat-grain derivatives and oatmeal. Here, it has been found that the oatmeal may lend cleaning properties in that oatmeal acts as a drawing agent to help remove certain oils or other materials from the surface to be cleaned. It also adds an abrasive quality to the cleaning compound to enhance the scrubbing ability.

Based on the foregoing, it is believed that this application is conditioned for allowance and action to that end is courteously solicited. Should the Examiner request any further information, in the form of affidavits or otherwise, regarding the matters addressed in this Amendment, the Examiner is invited to contact attorney for the Applicants at the telephone number

listed below. Applicants would specifically request the opportunity to submit such affidavits in the event that the Examiner maintains the rejection of the present application.

Respectfully submitted,

TIMOTHY J. MARTIN, P.C.


Timothy J. Martin, #28,640 ✓
Dana Rewoldt, #P-33,762
44 Union Blvd., Suite 520
Lakewood, Colorado 80228
(303) 988-0800

CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.8

✓ I hereby certify that the foregoing AMENDMENT is being deposited with the United States Postal Service as first-class mail, postage prepaid, in an envelope addressed to The Commissioner of Patents and Trademarks, Washington, DC 20231, on this 18th day of September, 1990.



**NTP TECHNICAL REPORT
ON THE
TOXICOLOGY AND CARCINOGENESIS
STUDIES OF *d*-LIMONENE**

(CAS NO. 5989-27-5)

IN F344/N RATS AND B6C3F₁ MICE

(GAVAGE STUDIES)

C.W. Jameson, Ph.D., Study Scientist

**NATIONAL TOXICOLOGY PROGRAM
P.O. Box 12233
Research Triangle Park, NC 27709**

January 1990

NTP TR 347

NIH Publication No. 90-2402

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health**

Conclusions: Under the conditions of these 2-year gavage studies, there was *clear evidence of carcinogenic activity*⁷ of *d*-limonene for male F344/N rats, as shown by increased incidences of tubular cell hyperplasia, adenomas, and adenocarcinomas of the kidney. There was *no evidence of carcinogenic activity* of *d*-limonene for female F344/N rats that received 300 or 600 mg/kg. There was *no evidence of carcinogenic activity* of *d*-limonene for male B6C3F₁ mice that received 250 or 500 mg/kg. There was *no evidence of carcinogenic activity* of *d*-limonene for female B6C3F₁ mice that received 500 or 1,000 mg/kg.

An increased severity of spontaneous nephropathy, increased incidences of linear mineralization of the renal medulla and papilla, and hyperplasia of the transitional epithelium of the renal papilla were present in dosed male rats.

SUMMARY OF THE TWO-YEAR GAVAGE AND GENETIC TOXICOLOGY STUDIES OF *d*-LIMONENE

Male F344/N Rats	Female F344/N Rats	Male B6C3F ₁ Mice	Female B6C3F ₁ Mice				
Doses 0, 75, or 160 mg/kg <i>d</i> -limonene in corn oil by gavage, 5 d/wk	0, 300, or 600 mg/kg <i>d</i> -limonene in corn oil by gavage, 5 d/wk	0, 250, or 500 mg/kg <i>d</i> -limonene in corn oil by gavage, 5 d/wk	0, 500, or 1,000 mg/kg <i>d</i> -limonene in corn oil by gavage, 5 d/wk				
Body weights in the 2-year study Approximately 8% reduction in high dose group	Approximately 5% reduction in high dose group	No effect	10% reduction in high dose group by end of study				
Survival rates in the 2-year study 24/60; 33/60; 40/60	42/60; 40/60; 36/60	33/60; 34/60; 39/60	43/60; 44/60; 43/60				
Nonneoplastic effects Mineralization (0/60; 43/60; 48/60) and epithelial hyper- plasia (0/60; 35/60; 43/60) of the renal papilla; renal tubular cell hyperplasia (0/60; 4/60; 7/60)	None	None	None				
Neoplastic effects Renal tubular cell adenoma- mas (0/60; 4/60; 3/60) and adenocarcinomas (0/60; 1/60; 2/60)	None	None	None				
Level of evidence of carcinogenic activity Clear evidence	No evidence	No evidence	No evidence				
Genetic toxicology assays <i>S. typhimurium</i> (gene mutation) Negative with and without S9	Mouse L5178Y/TX ⁺ (CR-mutagenesis) Negative with and without S9	CHO Cells In Vitro <table><tr><td>RTX</td><td>Apoptosis</td></tr><tr><td>Negative with and without S9</td><td>Negative with and without S9</td></tr></table>		RTX	Apoptosis	Negative with and without S9	Negative with and without S9
RTX	Apoptosis						
Negative with and without S9	Negative with and without S9						

⁷Explanation of Levels of Evidence of Carcinogenic Activity is on page 8.
A summary of the Peer Review comments and the public discussion on this Technical Report appears on pages 9-12.

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark OfficeAddress: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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07/413,395 09/27/99 GREENSPAN

D 1286

EXAMINER

SPEAR, J

ART UNIT

PAPER NUMBER

TIMOTHY J. MARTIN
44 UNION BLVD., STE. 620
LAKEWOOD, CO 80228

152

DATE MAILED:

12/20/90

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS
☒ This application has been examined ☐ Responsive to communication filed on ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), — days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 132

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice to Patent Drawing, PTO-848. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 5. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-15 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-2, 5-9 and 11 are rejected.
5. ☒ Claims 3-4, 10 and 12-15 are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____ Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice to Patent Drawing, PTO-848).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been: ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
3. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
1. ☐ Other

1 (Rev. 9-89)

EXAMINER'S ACTION

LPM 000190

Patent No. 417,395

2-

Art Unit 151

15.

Applicant's arguments filed September 18, 1990 have been fully considered but they are not deemed to be persuasive.

16.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

17.

Claims 1-2, 9 and 11 are rejected under 35 U.S.C. § 103 as being unpatentable over Dellutri US 4,630,937.

For claim 1, Dellutri shows compositions wherein 20-90% citric oil is used in combination with stearic acid, oleic acid and aloe vera. See col. 2, lines 10-13, Claims 1 and 7. Note that the stearic and oleic acids emulsify the composition. Col. 2, lines 33-38. Aloe vera acts as a moisturizer as in applicants' claimed invention. Col. 3, lines 23-28. Dellutri

LPM 000191

Serial # 113,335

-3

Ref. # 159

does not require change of oil. It would have been obvious to one of ordinary skill in the art to use change oil the method suggested by Bellutri's use of undistilled citrus oil. Although distilled D-Limonene is preferred, Bellutri teaches that citrus oil which can be derived from oranges is suitable for the invention. Col. 2, lines 10-17, thus negating applicants' claim of nonobviousness.

For claims 3, 9 and 11, see Bellutri as explained above.

14

Claims 5-8 are rejected under 35 U.S.C. § 101 as being unpatentable over Bellutri as applied to claim 1 above, and further in view of Juliano US 1,011,996.

Juliano teaches the inclusion of substances to maintain a specific pH. Both Juliano and Bellutri teach compositions having each compositions having a pH of 5.5. Juliano col. 3, lines 1-11 col. 3, lines 5-15. Bellutri col. 3, lines 55-59. It was Juliano's agent in the Bellutri invention would have been obvious to one of ordinary skill in the art. The motivation to do so is suggested by Bellutri's use of emulsifiers in view of Juliano's teaching emulsifiers in maintaining pH.

Claims 1-2, 5-8 and 11 are rejected.

15.

Claims 7, 10 and 12-15 are objected to as being dependent upon a rejected claim but would be allowable if rewritten

LPM 000192

RECEIVED 11/11/05

NOV 11 2005

In independent form including all of the limitations of the claim and any intervening claims.

20

THIS ACTION IS MADE FINAL. Applicant is reminded of the discussion of this policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IF THE EVENT A FINAL RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE STATUTORY PERIOD IS NOT EXPIRED UNTIL AFTER THE END OF THE THREE MONTH SHORTENED PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE STATUTORY ACTION IS MAILED. AND ANY EXTENSION SET FORTH IN 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THIS ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

21.

The Group and/or Art Unit location of your application in the EPO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 312.

LPM 000193

Serial No. 113,795

-5-

Ad. Unit 152

32.

An inquiry concerning this communication should be directed
to James H. Spear at telephone number (703) 308-2457.

Specified
December 18, 1990
(703) 308-2351

THOMAS RAGE
PRIMARY EXAMINER
ART UNIT 152

LPM 000194



RECEIVED: GROUP 150
 1991 MAR 26 AM 9:34
 IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RE: Patent Application for : Date: March 18, 1991
 D. Greenspan : Group: At Unit 150
 Serial No.: 07/413,395 : Examiner: Thurman Page
 Filed: September 27, 1989 : Action: AMENDMENT
 For: CLEANING COMPOSITIONS :
 WITH ORANGE OIL :

TO: The Commissioner of Patents and Trademark Office
 Washington, DC 20231

Sir:

In response to the Office Action dated 20 December 1990, finally rejecting this application, please enter this proposed amendment in the above identified application:

In the Claims:

1. (Once Amended) A skin cleaning composition adapted for external use on human tissues, comprising a first ingredient being between five percent (5%) and sixty percent (60%) by volume of orange oil, a second ingredient being a pharmaceutically acceptable moisturizer for human skin and a third ingredient being an emulsifying agent in the form of an oat grain derivative product.

Claim 4, line 2, kindly cancel "3", and substitute --1--.

6. (Once Amended) A skin cleaning composition for external use on human tissues, comprising orange oil, a pharmaceutically acceptable moisturizer for human skin and an oat grain derivative product as an emulsifying agent, wherein said composition has a pH within a range of 4.5 to 6.0, inclusively.

4-3-91* 9/11/91 (per amended)
 03 A cleaning composition for use on human skin comprising
 forty-five percent (45%) or less by volume of orange oil, forty-
 five percent (45%) or less by volume of [an emulsifying agent,]
oatmeal and a pharmaceutically acceptable moisturizer.

Claim 13, line 1, kindly cancel "12" and substitute --11--.

Kindly delete Claims 3 and 10.

REMARKS

This action is in response to the Examiner's Office Action of 20 December 1990 in which Claims 1-2, 5-9 and 11 were rejected and Claims 3-4, 10 and 12-15 were objected to in a final action.

Pursuant to the Examiner's suggestion Claim 1 has been amended to include the language of allowable claim 3. Claim 3 has been canceled. The dependency of Claim 4 has been accordingly changed. Claims 5 and 6 which depend from newly amended Claim 1 are believed allowable as written.

Independent Claim 7 now incorporates the language of allowable Claim 10 so that Claim 7 specifies the emulsifying agent is an oat grain derivative product. Claim 10 has been canceled. It is believed that claims 8 and 9 which depend from newly amended Claim 7 are patentable as written without further amendment.


Claim 11 now incorporates the additional language found in allowable Claim 12, and Claim 12 has been canceled. The dependency of Claim 13 has been correspondingly changed. These amendments have been made without prejudice to Applicants' right

to file a continuation or continuation-in-part of the original independent claims.

It is believed that the claims are now in condition for allowance. The Examiner is respectfully requested to enter this amendment and grant allowance in this manner, as the references do not fully and fairly disclose the invention as now claimed.

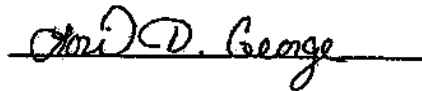
Respectfully submitted,

TIMOTHY J. MARTIN, P.C.


Timothy J. Martin, #28,640
Dana Rewoldt, #33,762
44 Union Blvd., Suite 620
Lakewood, Colorado 80228
(303) 988-0800

CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.8

I hereby certify that the foregoing AMENDMENT is being deposited with the United States Postal Service as first-class mail, postage prepaid, in an envelope addressed to The Commissioner of Patents and Trademarks, Washington, DC 20231, on this 12th day of March, 1991.





UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: Box ISSUE FEE
COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

TIMOTHY J. MARTIN
44 UNION BLVD., STE. 520
LAKEWOOD, CO 80228

NOTICE OF ALLOWANCE
AND ISSUE FEE DUE

- ☐ This notice is a communication from the Examiner.
☐ This notice is issued in view of applicant's communication filed.

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
07/413,395	09/27/89	012	SPEAR, J	152 04/10/91
First Named Applicant: GREENSPAN, DOUGLAS H.				
TITLE OF INVENTION: CLEANING COMPOSITIONS WITH ORANGE OIL				

ANY'S DOC. NO.	CLASS-SUBCLASS	BATCH NO.	APPLN TYPE	SMALL ENTITY	FEE DUE	DATE DUE
J 1286	424-443,000	064	UTILITY	YES	\$525.00	07/10/91

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.
PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY Status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the Status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
B. If the Status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
B. File verified statement of Small Entity Status below, or with payment of 1/2 the FEE DUE shown above.

- II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by a charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, Part C of this notice should also be completed and returned.
III. All communications regarding this application must give series code (or filing date), serial number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Patents Issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees.



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
07/413,395	09/27/89	GREENSPAN	B-1206

TIMOTHY J. MARTIN
44 UNION BLVD., STE. 620
LAKEWOOD, CO 80228

EXAMINER	
SPEAR, J	
ART UNIT	PAPER NUMBER
152	8/B
DATE MAILED:	

04/10/91

NOTICE OF ALLOWABILITY

PART I.

1. ☒ This communication is responsive to Amendment filed March 19, 1991
2. ☐ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
3. ☒ The allowed claims are 1-2, 4-9, 11 and 13-15
4. ☐ The drawings filed on _____ are acceptable.
5. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received. ☐ not been received. ☐ been filed in parent application Serial No. _____ filed on _____
6. ☒ Note the attached Examiner's Amendment.
7. ☐ Note the attached Examiner Interview Summary Record, PTOL-413.
8. ☐ Note the attached Examiner's Statement of Reasons for Allowance.
9. ☐ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
10. ☐ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II.

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

1. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
2. ☐ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
 - a. ☐ Drawing Informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-848, attached hereto or to Paper No. _____ CORRECTION IS REQUIRED.
 - b. ☐ The proposed drawing correction filed on _____ has been approved by the examiner. CORRECTION IS REQUIRED.
 - c. ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
 - d. ☐ Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE AND SERIAL NUMBER.

Attachments:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Examiner's Amendment | - Notice of Informal Application, PTO-152 |
| - Examiner Interview Summary Record, PTOL-413 | - Notice re Patent Drawings, PTO-848 |
| - Response for Allowance | - Listing of Bonded Draftsman |
| - Notice of References Cited, PTO-892 | - Other |
| - Information Disclosure Citation, PTO-1449 | |

THOMAS H. PRICE
SUPERVISOR, PATENT EXAMINER
ART UNIT 152

8/B

Serial No. 413395

-2-

Art Unit 152

An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the Issue Fee.

Authorization for this Examiner's Amendment was given in a telephone interview with Timothy J. Martin on April 5, 1991.

Now elected claims 16-18 have been cancelled by applicant. Applicant's amendment filed March 19, 1991, now places application in condition for allowance.

Claims 1-2, 4-9, 11 and 13-15 are allowable over the prior art of record.

Any inquiry concerning this communication should be directed to James H. Spear at telephone number 703 308-2351.

JS

J. H. Spear

04/5/91


TIMOTHY E. PAGE
SUPERVISORY PATENT EXAMINER
ART UNIT 152

LPM 000200

PART B - ISSUE FEE TRANSMITTAL

525-242-B
15-501

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 2 through 6 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advanced order and notification of maintenance fees will be mailed to addresses specified in Block 1 unless you direct otherwise, by: (a) specifying a new correspondence address in Block 3 below; or (b) providing the PTO with a separate "Fee Address" for maintenance fee notifications with the payment of Issue Fee or thereafter. See reverse for Certificate of Mailing.



1. CORRESPONDENCE ADDRESS

TIMOTHY J. MARTIN
44 UNION BLVD., SUITE 520
LAKEWOOD, CO 80228

2. INVENTOR'S ADDRESS CHANGE (Complete only if there is a change)

INVENTOR'S NAME

Street Address

City, State and ZIP Code

CO-INVENTOR'S NAME

Street Address

City, State and ZIP Code

☐ Check if additional changes are on reverse side

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP AND UNIT	DATE MAILED
15-501	07/18/91	042	SP4/M: J	07/18/91
First Named Applicant	TIMOTHY J. MARTIN			

TITLE OF INVENTION

COMPOSITIONS WITH ORANGE OIL

ATTORNEY DOCKET NO.	CLASSIFICATION	BATCH NO.	APPL. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
15-501	024-143.000	064	UTILITY	YES	\$25.00	07/18/91

3. Further correspondence to be mailed to the following:

Timothy J. Martin
44 Union Blvd., Suite 520
Lakewood, Colorado 80228

4. For printing on the patent front page, list the names of not more than 3 registered patent attorneys or agents OR alternatively, the name of a firm having as a member a registered attorney or agent. If no name is listed, no name will be printed.

1 Timothy J. Martin

2

3

DO NOT USE THIS SPACE

120 HB 07/18/91 07413395
120 HB 07/18/91 07413395

1 242 525.00 CK
1 501 15.00 CK

5. ASSIGNMENT DATA TO BE PRINTED ON THE PATENT (print or type)

(1) NAME OF ASSIGNEE:

D. Greenspan and M. Ingram

(2) ADDRESS (City & State or Country)

200 Lois Circle, Louisville, CO 80027

(3) STATE OF INCORPORATION, IF ASSIGNEE IS A CORPORATION

A. ☐ This application is NOT assigned.

☒ Assignment previously submitted to the Patent and Trademark Office.

Assignment is being submitted under separate cover. Assignments should be directed to Box ASSIGNMENTS.

PLEASE NOTE: Unless an assignee is identified in Block 5, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RE: Patent Application for : Dated: July 10, 1991
Douglas H. Greenspan : Group: Art Unit 152
Serial No.: 07/413,395 : Examiner: J. Spear
Filed: September 27, 1989 : Action: TRANSMITTAL OF BASE
For: CLEANING COMPOSITIONS : ISSUE FEE
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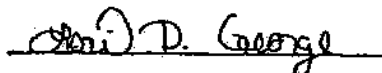
Respectfully submitted,

TIMOTHY J. MARTIN, P.C.


Timothy J. Martin, #28,640
Dana Rawoldt, #53,762
44 Union Blvd., Suite 620
Lakewood, Colorado 80228
(303) 988-0800

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PTO UTILITY GRANT
Paper Number 9

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States
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*Has received an application for a patent
for a new and useful invention. The title
and description of the invention are en-
closed. The requirements of law have
been complied with, and it has been de-
termined that a patent on the invention
shall be granted under the law.*

Therefore, this


United States Patent

*Grants to the person or persons having
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others from making, using or selling the
invention throughout the United States
of America for the term of seventeen
years from the date of this patent, sub-
ject to the payment of maintenance fees
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Murtina A. Thompson

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PTO-1584

COMP PTD-875 REV 1-94	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO 413 385	FILED DATE 9/27/89
PATENT APPLICATION FEE DETERMINATION RECORD		APPLICANT FIRST NAME Douglas H. Munn	

CLAIMS AS FILED - PART I

FOR	NO FILED	NO EXTRA
BASIC FEE		
TOTAL CLAIMS	18	-20-
INDEP. CLAIMS	4	1-
MULTIPLE DEPENDENT CLAIM PRESENT		

* In the difference of col. 1 is less than zero enter "0" in col. 2

SMALL ENTITY

RATE	FEE
	\$ 185
x 6	
x 18	18
60	
TOTAL	\$ 243

OTHER THAN A
SMALL ENTITY

RATE	FEE
	\$ 370
x 12	
x 36	
120	
TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	PRESENT EXTRA.
TOTAL					
INDEP.					
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM					

SMALL ENTITY

RATE	ADDITIONAL FEE
x 6	
x 18	
60	
TOTAL	
ADDITIONAL FEE	

OTHER THAN A
SMALL ENTITY

RATE	ADDITIONAL FEE
x 12	
x 36	
120	
TOTAL	
ADDITIONAL FEE	

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	PRESENT EXTRA.
TOTAL					
INDEP.					
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM					

SMALL ENTITY

RATE	ADDITIONAL FEE
x 6	
x 18	
60	
TOTAL	
ADDITIONAL FEE	

OTHER THAN A
SMALL ENTITY

RATE	ADDITIONAL FEE
x 12	
x 36	
120	
TOTAL	
ADDITIONAL FEE	

AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	PRESENT EXTRA.
TOTAL					
INDEP.					
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM					

SMALL ENTITY

RATE	ADDITIONAL FEE
x 6	
x 18	
60	
TOTAL	
ADDITIONAL FEE	

OTHER THAN A
SMALL ENTITY

RATE	ADDITIONAL FEE
x 12	
x 36	
120	
TOTAL	
ADDITIONAL FEE	

* If the entry in Col. 1 is less than the entry in Col. 2 enter "0" in Col. 3
 ** If the "Highest No. Previously Paid For" in THIS SPACE is less than 20 enter "20"
 *** If the "Highest No. Previously Paid For" in THIS SPACE is less than 3 enter "3"
 The "Highest No. Previously Paid For" if not entered is the highest number found in the appropriate box in Col. 1

LPM 000205

42

EXHIBIT C

greenspan JAN 12.txt

1

1 IN THE UNITED STATES DISTRICT COURT
2 FOR DISTRICT OF DELAWARE
3 CASE NO 04-01507 (SLR)
4 LP MATTHEWS, LLC,)
5 Plaintiff,)
6 v.)
7 BATH & BODY WORKS, INC.;)CASE NUMBER
8 LIMITED BRANDS, INC.;)04-cv-01507 (SLR)
9 KAO BRANDS CO. (f/k/a THE)
10 ANDREW JERGENS COMPANY);)
11 and KAO CORPORATION,)
12 Defendants.)
13 - - - - -
14 BUSINESS CONFIDENTIAL
15 DEPOSITION OF DOUGLAS H. GREENSPAN
16 VOLUME I (Pgs. 1 - 268)
17 Thursday, January 12, 2006
18
19 Reported by:
20 Craig L. Knowles, CM
21 Boulder, Colorado
22 Thursday, January 12, 2006

greenspan JAN 12.txt

2

1 Deposition of DOUGLAS H. GREENSPAN, a witness
2 herein, called for examination by counsel for
3 Defendants in the above-entitled matter, pursuant
4 to notice and the Federal Rules of Civil Procedure,
5 the witness being duly sworn by CRAIG KNOWLES, a
6 Notary Public in and for the State of Colorado,
7 taken at the Boulder Marriott, Telluride Room, 2660
8 Canyon Boulevard, Boulder, Colorado, at 9:07 a.m.,
9 on Thursday, January 12, 2006, and the proceedings
10 being taken down in Stenotype by CRAIG KNOWLES and
11 transcribed under his direction.

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greenspan JAN 12.txt

97

1 Q. Is the Healthy Kleaner in that inventory
2 today the same as the Healthy Kleaner that was
3 initially marketed?

4 A. Yes.

5 Q. So the formula of Healthy Kleaner has never
6 changed; is that correct?

7 MR. BURATTI: Objection. Ambiguous.

8 A. I don't recall.

9 BY MR. BAXTER:

10 Q. You don't know of any, or you can't recall
11 any changes in the formulation of Healthy Kleaner
12 as you sit here today; is that correct?

13 A. Yes.

14 Q. As far as you know, did Healthy Kleaner
15 always contain oatmeal?

16 MR. BURATTI: Objection, assumes facts not
17 established.

18 A. Depends on your definition of oatmeal.

19 BY MR. BAXTER:

20 Q. What is your definition of oatmeal?

21 MR. BURATTI: Objection to the extent that
22 question calls for a legal conclusion with respect

greenspan JAN 12.txt

98

1 to the patent. I'm not sure that you are asking
2 him about what is in the patent or what oatmeal
3 means to him today.

4 A. What oatmeal means to me is ground or
5 processed oat grain product.

6 BY MR. BAXTER:

7 Q. Healthy, has Healthy Kleaner ever contained
8 oatmeal using that definition?

9 A. Yes.

10 Q. And has it always contained oatmeal using
11 that definition?

12 A. Yes.

13 Q. Whose idea was it to include oatmeal in
14 Healthy Kleaner?

15 A. It was mine.

16 Q. And why did you decide to include oatmeal
17 in Healthy Kleaner?

18 A. I don't remember.

19 Q. Did -- in the last year, has anybody asked
20 you about what kind of cleaning compositions you
21 prepared and tested in connection with the patent
22 application which matured into Greenspan Exhibit

greenspan JAN 12.txt

99

1 Number 1?

2 MR. BURATTI: I'm going to caution the
3 witness not to disclose any privileged information
4 here in the answer to that question,

5 Answer the question "yes" or "no" or "I
6 don't know."

7 THE WITNESS: Could you repeat the question
8 without -- there were a lot of pauses in there.

9 BY MR. BAXTER:

10 Q. I will re-ask the question.

11 In the last year, has anyone asked you
12 about the compositions you tested in connection
13 with the patent application which matured into
14 Greenspan Exhibit Number 1?

15 A. Yes.

16 Q. When was that?

17 MR. BURATTI: Again, I caution the witness
18 to make sure he doesn't divulge any privileged
19 information.

20 A. In the last couple weeks.

21 BY MR. BAXTER:

22 Q. At that time were you able to remember

EXHIBIT D

REDACTED

EXHIBIT E

REDACTED

EXHIBIT F

REDACTED

EXHIBIT G



College Dictionary

Laurence Urdang

Editor in Chief

Stuart Berg Flexner

Managing Editor

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Dictionary of the

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The Unabridged Edition

Jess Stein

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a. s/ia

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EXHIBIT H

United States Patent [19]

Tsukuda et al.

[11] Patent Number: 5,013,485

[45] Date of Patent: May 7, 1991

[54] **LIQUID DETERGENT COMPOSITION
CONTAINING TERPENE AND CALCIUM OR
MAGNESIUM SALTS**[75] Inventors: Kazumori Tsukuda; Masakazu Toda,
both of Utsunomiya; Masami Saito,
Ichikai; Masaki Tsunadoki,
Utsunomiya, all of Japan

[73] Assignee: Kao Corporation, Tokyo, Japan

[21] Appl. No.: 373,278

[22] Filed: Jun. 28, 1989

[30] Foreign Application Priority Data

Jul. 19, 1988 [JP] Japan 63-177996

[51] Int. Cl.³ C11D 1/12; C11D 3/04;
C11D 3/18[52] U.S. Cl. 251/551; 252/550;
252/554; 252/162; 252/558[58] Field of Search 252/106, 107, 111, 114,
252/118, 122, 139, 153, 162, 170, 171, 545, 546,
540, 551, 550, 554

[56] References Cited

U.S. PATENT DOCUMENTS

4,414,128 11/1983 Goffinet 252/111

Primary Examiner—Prince E. Willis

Assistant Examiner—John F. McNally

Attorney, Agent, or Firm—Obdon, Spivak, McClelland,
Maier & Neustadt

[57] ABSTRACT

A liquid detergent composition for household use is disclosed. It comprises, as essential components, (A) 0.01–1.0% by weight of an anionic surface active agent, (B) 0.01–1.0% by weight of a terpene-type hydrocarbon solvent selected from monoterpenes and sesquiterpenes, and (C) 0.001–0.1% by weight of a water-soluble divalent metallic salt. The composition has superior detergency, exhibits a minimum adverse effect on surfaces which it contacts and a high degree of safety when in contact with the human body, and does not require rinsing.

7 Claims, No Drawings

5,013,485

1

LIQUID DETERGENT COMPOSITION CONTAINING TERPENE AND CALCIUM OR MAGNESIUM SALTS

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a liquid detergent composition, and, in particular, to a liquid detergent composition for household use having superior detergency, as well as exhibiting a minimum adverse effect on surfaces which it contacts, a high degree of safety when in contact with the human body, and which does not require rinsing.

2. Description of the Background

In general, when a prolonged period of time elapses after a solid surface gets soiled, washing becomes difficult because the soiling material adheres strongly to the surface. For example, in the case where dirt adhering to exhaust fan blades, walls in the kitchen area, glass, refrigerator surfaces, and the like has accumulated over a long period of time, this dirt changes to a highly viscous, oxidized form of degenerated oils. In addition, difficult-to-clean, oily-type soiling, such as that from hand stains, cigarette tars, and the like exists throughout the household in locations other than the kitchen area.

Commonly known detergents for removing such oily-type soiling include those containing a strong alkaline agent such as sodium hydroxide or the like, as a major component, and those containing an organic amine, a water-soluble organic solvent (such as ethylene glycol monoalkyl ether, diethylene glycol monoalkyl ether, or the like), and a surface active agent.

However, the former type presents a safety problem, especially with respect to skin irritation, while the latter type gives rise to discomfort because of having an offensive odor of the organic solvent.

Detergents containing monoterpenes and sesquiterpenes have been proposed as detergents with a high degree of safety and without an offensive odor of organic solvents (Japanese Patent Laid-open Nos. 14296/1986, 14297/1986, and 164798/1987). Although they have high detergency performance, their handling is sometimes cumbersome upon practical use. For example, they must be diluted with water before use, or rinsed off with water after being used in the original liquid form. This problem is caused by abrasive powders contained in the detergent or surface active agents contained in the emulsion type detergents.

SUMMARY OF THE INVENTION

The present inventors conducted extensive studies to provide, with due consideration to the drawbacks of such conventional detergents, a liquid detergent composition for household use having superior detergency, exhibiting a minimum adverse effect on surfaces which it contacts, and a high degree of safety when in contact with the human body, and which does not require rinsing, and found that a liquid detergent composition which comprises an anionic surface active agent, a terpene-type hydrocarbon selected from monoterpenes and sesquiterpenes, and a water-soluble divalent metal salt, did not require dilution prior to use, nor an after-rinse, had a high degree of safety, and easily removed soiling.

2

Accordingly, an object of the present invention is to provide a liquid detergent composition comprising as essential components:

- (A) 0.01–1.0% by weight of an anionic surface active agents,
- (B) 0.01–1.0% by weight of a terpene-type hydrocarbon solvent selected from monoterpenes and sesquiterpenes, and
- (C) 0.001–0.1% by weight of a water-soluble divalent metal salt.

Other objects, features and advantages of the invention will hereinafter become more readily apparent from the following description.

DETAILED DESCRIPTION OF THE INVENTION AND PREFERRED EMBODIMENTS

Examples of the anionic surface active agent used as the component (A) in the present invention include sulfonate-type anionic surface active agents and sulfate-type anionic surface active agents commonly used in detergent compositions. The sulfonate-type anionic surface active agents include linear or branched alkyl (C_8 – C_{22}) benzene sulfonates, long chain alkyl (C_8 – C_{22}) sulfonates, and long chain olefin (C_8 – C_{22}) sulfonates. Examples of sulfate-type anionic surface active agents include long chain monoalkyl (C_8 – C_{22}) sulfates, polyoxyethylene (1–6 mols) long chain alkyl (C_8 – C_{22}) ether sulfates, polyoxyethylene (1–6 mols) alkyl (C_8 – C_{18}) phenylether sulfates, and the like. As counter ions to these anionic surface active agents, examples which can be given are alkali metal ions such as sodium, potassium, and the like, and alkanolamine ions such as monoethanolamine, diethanolamine, triethanolamine, and the like.

Among the above anionic surface active agents the sulfonate-type anionic surface active agents are particularly desirable as the (A) component of the present invention from the aspect of high resistance to hydrolysis. In addition, linear or branched alkylbenzene sulfonates are desirable from the aspect of high detergency.

The (A) component anionic surface active agents may be used individually or as a mixture of two or more types in the composition of the present invention.

The amount of the (A) component as a percentage by weight (hereinafter referred to as wt %) of the total composition is in the range of 0.01 to 1.0 wt %; a particularly desirable amount is in the range of 0.1 to 0.3 wt %. If the amount is less than 0.01 wt % of the mixture, the surface active agent exhibits insufficient emulsifying and dispersion action and the solubilizing activity is inadequate; if greater than 1.0 wt %, it leaves wiping traces on the surface of the washed object after wiping, which needs an undesirable rinsing step.

The component (B) of the composition of the present invention is a terpene-type hydrocarbon solvent selected from monoterpenes and sesquiterpenes. Examples of monoterpene-type hydrocarbon solvents are D-limonene and L-limonene which are contained in orange oil, lemon oil, or the like, α -terpineol contained in pine oil or the like, and α -pinene, β -pinene, myrcene, and p-cymene contained in turpentine oil or the like. Examples of sesquiterpene-type hydrocarbon solvents which can be given are caryophyllene, cedrene, and the like, which are contained in substantial quantities in cedar oil, clover oil, camanga oil, and the like.

The (B) component which is a terpene-type hydrocarbon solvent selected from monoterpenes and sesquiterpenes may be used individually or as a mixture of two

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or more types in the composition of the present invention. In addition, it is possible to incorporate their starting materials of orange oil, turpentine oil, or pine oil as they are into the composition of the present invention.

A desirable amount of the (B) component as a percentage of the total composition is in the range of 0.01 to 1.0 wt %; a particularly desirable amount is in the range of 0.1 to 0.5 wt %. If the amount is less than 0.01 wt % of the composition, action as a solvent cannot be expected; if greater than 1.0 wt %, a large amount of a surface active agent is necessary to ensure stable solubilization of the compound. Because remnants remain on the surface of the washed object they must be rinsed and wiped a second time, which is undesirable.

Water-soluble divalent metal salts which are suitable as the component (C) of the composition of the present invention are, for example, calcium salts and magnesium salts. Of the calcium salts, the chloride and the sulfate are particularly desirable; for the magnesium salts, the sulfate is best used.

window glass. The detergency, wiping traces, and solvent odor were then evaluated.

The object window glass was sprayed with 1 cc of a liquid detergent using a commercial sprayer, and wiped with a dry towel. Sensory evaluations were then carried out, using the following evaluation criteria.

Evaluation Criteria

Detergency

O: 80% of soiling is removed

F: 20 to 50% of soiling is removed

X: Almost no soiling removed

Wiping traces

O: Second wiping not necessary

F: Slight wiping traces remaining

X: Considerable wiping traces observed

Solvent odor

O: No objectionable odor detected

F: Slight objectionable odor

X: Objectionable odor noted

The results are shown in Table 1.

TABLE 1

Components	(wt %)						
	1	2	3	4	5	6*	7*
Sodium alkylbenzene sulfonate(1)	0.5	0.5	0.1	0.3	1.5	0.2	0.3
Polyoxyethylenesulfonyl ether(2)	—	—	—	0.2	—	0.1	—
D-limonene	—	—	0.3	—	0.5	0.3	—
α -Pinene	—	—	—	0.5	—	—	0.5
Ethyl cellosolve	1.0	—	—	—	—	—	—
Butyl cellosolve	—	1.0	—	—	—	—	—
Calcium chloride	—	—	—	—	0.01	0.01	0.01
Ion exchanged water	Balance	Balance	Balance	Balance	Balance	Balance	Balance
Detergency	O	O	F	F	O	O	O
Wiping traces	O	F	F	F	X	O	O
Solvent odor	X	F	O	O	O	O	O

*Compositions of the present invention

(1) An average carbon number in alkyl chain: C₁₂

(2) An average carbon number in alkyl chain: C₁₂. An average ethylene oxide addition ratio: 4

A desirable amount of the (C) component in a percentage of the total composition is in the range of 0.001 to 0.1 wt %. The HLB value of the component (A) of the present invention can be freely adjusted corresponding to the amount of the component (C) added. Addition of the component (C) also assists to solubilize the component (B).

In addition, as required, components other than the essential components (A), (B), and (C) can be added to the liquid detergent composition of the present invention. These optional components include nonionic surface active agents, alkaline agents, dispersing agents, solvents, acids, perfumes, dyes, pigments, preservatives, germicides, and the like.

Other features of the invention will become apparent in the course of the following description of the exemplary embodiments which are given for illustration of the invention and are not intended to be limiting thereof.

EXAMPLES

Example 1

Detergent compositions listed in the following Table 1 were prepared and actually used to wash a household

Example 2

Detergent compositions listed in the following Table 2 were prepared, and the detergency and wiping traces were evaluated using soiled models.

Soiled models used were 3 cm×8 cm glass plates to which cigarette tars were adhered. The glass plates were immersed in test solutions for 2 minutes and the elimination of the soiling was evaluated to determine the detergency according to the following criteria. The glass plates were wiped with dry towel and the completeness after drying was sensorially evaluated according to the following criteria to determine wiping traces.

Detergency

O: 80% of soiling is removed

F: 20 to 50% of soiling is removed

X: Almost no soiling removed

Wiping traces

O: Second wiping not necessary

F: Slight wiping traces remaining

X: Considerable wiping traces observed

Results are shown in Table 2.

TABLE 2

Components	(wt %)							
	8*	9*	10*	11*	12*	13	14	15
Sodium alkylbenzene sulfonate(1)	0.3	0.3	0.3	0.3	0.5	0.3	0.3	2.5
Polyoxyethylenesulfonyl-	0.1	0.1	0.1	0.1	0.5	0.1	0.1	2.5

5

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6

TABLE 2-continued

Components	(wt %)							
	8*	9*	10*	11*	12*	13	14	15
Others(2)								
Orange oil (Major component D-limonene)	0.5	—	—	—	1.0	—	—	10.0
Turpentine oil (Major component α , β -pinene)	—	0.5	—	—	—	—	—	—
Cananga oil (Major component α , β -caryophyllene)	—	—	0.1	—	—	—	—	—
α -terpineol	—	—	—	0.5	—	—	—	—
Butyl carbitol	—	—	—	—	—	3.0	—	—
Ethanol	—	—	—	—	—	—	10.0	—
Dioctanolamine	0.5	0.5	0.5	0.5	0.1	0.5	0.5	0.1
Calcium chloride	0.01	0.01	0.01	0.01	0.01	—	—	—
Ion exchanged water	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance
Detergency	O	O	O	O	O	O	F	O
Wiping traces	O	O	O	O	O	F	O	X

*Composition of the present invention

(1) An average carbon number is alkyl chain C₂₁(2) An average carbon number is alkyl chain C₁₂. An average ethylene oxide addition mole is 6.

Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

What is claimed is:

1. A liquid detergent composition comprising at essential components:

(A) 0.01–1.0% by weight of an anionic surface active agent;

(B) 0.01–1.0% by weight of a terpene hydrocarbon solvent selected from monoterpenes and sesquiterpenes; and

(C) 0.001–0.1% by weight of a water-soluble divalent metallic salt selected from the group consisting of CaCl₂, CaSO₄ and MgSO₄.

2. The liquid detergent composition of claim 1, wherein the anionic surface active agent is selected from the group consisting of the linear or branched alkyl C₄–C₂₁ benzene sulfonates, long chain alkyl C₄–C₂₁ sulfonates, long chain olefin C₄–C₂₁ sulfonates, long chain monoalkyl C₄–C₂₁ sulfates, polyoxyethylene (1–6 mol) long chain alkyl C₄–C₂₁ ether sulfates and

polyoxyethylene (1–6 mol) alkyl C₄–C₁₈ phenylether sulfates or mixtures thereof.

3. The liquid detergent composition of claim 1, wherein the anionic surface active agent is present in from 0.1–0.5% by weight.

4. The liquid detergent composition of claim 1, wherein the terpene hydrocarbon solvent is selected from the group consisting of D-limonene, L-limonene, orange oil, lemon oil, α -terpineol, pine oil, α -pinene, β -pinene, myrcene, p-cymene, turpentine oil, caryophyllene, cedrene, cedar oil, clover oil, and cananga oil or mixtures thereof.

5. The liquid detergent composition of claim 1, wherein the terpene hydrocarbon is present in from 0.1–0.5% by weight.

6. The liquid detergent composition of claim 1, wherein the counterion of the anionic surface active agent is selected from the group consisting of alkali metal ions, alkanolamine ions.

7. The liquid detergent composition of claim 1, wherein the anionic surface active agent is a linear or branched alkyl benzene sulfonate.

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CERTIFICATE OF SERVICE

I hereby certify that on the 7th day of July, 2006, the attached **REDACTED PUBLIC VERSION OF LP MATTHEWS' OPENING CLAIM CONSTRUCTION BRIEF** was served upon the below-named counsel of record at the address and in the manner indicated:

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